IN THE CLAIMS:

Please cancel Claims 1-36 and replace them with Claims 37-72:

--37. Detection process comprising the following steps:

(a) treatment of a sample comprising a first and a second marker with a first recognition species which recognizes the first marker,

(b) treatment of the sample with a second recognition species which recognizes both the first marker and the second marker,

(c) treatment of the sample with a third recognition species which recognizes the second marker,

(d) detection of the presence or absence of the first and the second marker in the sample, by the detection of the presence or absence of a complex of the recognition species and markers mentioned.

38. Detection process comprising the following steps:

(a) treatment of a sample comprising a first and a second marker with a first recognition species which recognizes the first marker,

(b) treatment of the sample with a second recognition species which recognizes the first marker and a third recognition species,

(c) treatment of the sample with a third recognition species which recognizes the second marker and the second recognition species,

(d) detection of the presence or absence of the first and the second marker in the sample, by the detection of the presence or absence of a complex of the recognition species and markers mentioned.

39. Detection process according to Claim 37 or 38, characterized in that further recognition species which recognize further markers are employed in further treatment steps.

40. Detection process according to one of Claims ~~37-39~~, characterized in that a recognition species, preferably the first recognition species, is immobilized on a support.

41. Detection process according to Claim 40, characterized in that the support is selected from a solid or gelatinous material, in particular chip material and/or thin layers of the material, preferably ceramic, metal, in particular noble metal, glasses, plastics, crystalline materials or (bio)molecular filaments, in particular cellulose or structural proteins.

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42. Detection process according to one of Claims 37-41, characterized in that the recognition species and/or the marker mentioned is a synthetic substance, a natural substance and/or a natural substance derivative, preferably selected from a peptide, peptoid, protein, saccharide or a nucleic acid.

43. Detection process according to Claim 42, characterized in that the synthetic substance, a natural substance or a natural substance derivative is selected from a receptor or a functional part thereof, in particular from the extracellular domain of a membrane-based receptor, an antibody or a functional part thereof, in particular an Fv fragment, a single-chain Fv fragment (ScFv) or an Fab fragment, a cell constituent, in particular a lipid, glycoprotein, filament constituent, lectin, liposome, mitogen, antigen, secondary metabolite or hapten, a cell, in particular a lymphoid cell, or a virus, in particular a virus constituent, especially a capsid, or a viroid, or a derivative, in particular an acetate, or their active parts, or a single-stranded or double-stranded nucleic acid, in particular a natural nucleic acid in the form of a DNA or RNA or an unnatural nucleic acid, preferably p-RNA, p-DNA, PNA or CNA, or hybrids of the substances mentioned.

44. Detection process according to one of Claims 37-43, characterized in that the recognition of a marker by a recognition species takes place by means of non-covalent interactions, in particular by means of hydrogen bonds, salt bridges, stacking, formation of metal ligands, charge-transfer complexes, Van-der-Waals forces or hydrophobic interactions.

45. Detection process according to one of Claims 37-44, characterized in that at least one recognition species is labelled, in particular all recognition species are labelled, preferably at least two recognition species are differently labelled.

46. Detection process according to Claim 45, characterized in that the marker is a non-radioactive marker or radioactive marker, preferably an LOCI marker, FRET marker, fluorescence quenching marker, SPA marker, fluorescence marker, enzymatic marker, redox marker or spin marker.

47. Detection process according to one of Claims 37-46, characterized in that the marker and/or the signal is amplified.

48. Detection process according to one of Claims 37-47, characterized in that the detection is carried out competitively according to step (d) of the process.

49. Detection process according to one of Claims 37-48, characterized in that at least one marker is a natural or unnatural, single-stranded or double-stranded nucleic acid and each further marker is a synthetic substance, a different natural substance or a different natural substance derivative other than a nucleic acid, preferably an antigen.

50. Detection process according to one of Claims 37-48, characterized in that the first marker and each further marker is a natural or unnatural, single-stranded or double-stranded nucleic acid or alternatively a synthetic substance, a different natural substance or a different natural substance derivative other than a natural nucleic acid, preferably an antigen.

51. Detection process according to one of Claims 37-50, characterized in that a natural or unnatural, single-stranded or double-stranded nucleic acid as a marker is recognized by a natural or unnatural, single-stranded or double-stranded nucleic acid as recognition species.

52. Detection process according to one of Claims 37-51, characterized in that a synthetic substance, a natural substance or a natural substance derivative is recognized by a synthetic substance, a natural substance or a natural substance derivative, preferably by an antibody or an antibody derivative, as recognition species.

53. Detection process according to one of Claims 37-52, characterized in that at least one recognition species is a natural or unnatural, single-stranded or double-stranded nucleic acid and each further recognition species is a synthetic substance, different natural substance or different natural substance derivative other than a nucleic acid, preferably an antibody or an antibody derivative.

54. Detection process according to one of Claims 37-52, characterized in that the first recognition species and each further recognition species is a natural or unnatural, single-stranded or double-stranded nucleic acid or alternatively a synthetic substance, different natural substance or different natural substance derivative other than a nucleic acid, preferably an antibody or an antibody derivative.

55. Detection process according to one of Claims 37-52, characterized in that at least one recognition species is a hybrid of a natural or unnatural, single-stranded or double-stranded nucleic acid and another natural or unnatural, single-stranded or double-stranded nucleic acid.

56. Detection process according to one of Claims 37-52, characterized in that at least one recognition species is a hybrid of a synthetic substance, a natural substance or a natural substance derivative and another synthetic substance, another natural substance or another natural substance derivative.

57. Detection process according to one of Claims 37-52, characterized in that at least one recognition species is a hybrid of a natural or unnatural, single-stranded or double-stranded nucleic acid and a synthetic substance, a different natural substance or a different natural substance derivative other than a nucleic acid, preferably an antibody or antibody derivative.

58. Detection process according to one of Claims 37-52, characterized in that a first recognition species is a natural or unnatural, single-stranded or double-stranded nucleic acid, a second recognition species is a hybrid of a natural or unnatural, single-stranded or double-stranded nucleic acid and a synthetic substance, a natural substance or a natural substance derivative, preferably an antibody or antibody derivative.

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59. Detection process according to one of Claims 37-52, characterized in that a first recognition species is a natural or unnatural, single-stranded or double-stranded nucleic acid, a second recognition species is a hybrid of a natural or unnatural, single-stranded or double-stranded nucleic acid and another natural or unnatural, single-stranded or double-stranded nucleic acid, and the third recognition species is a further different natural or unnatural, single-stranded or double-stranded nucleic acid.

60. Detection process according to one of Claims 37-52, characterized in that a first recognition species is a synthetic substance, a natural substance or a natural substance derivative, preferably an antibody or antibody derivative, a second recognition species is a hybrid of a synthetic substance, a natural substance or a natural substance derivative, preferably an antibody or antibody derivative, and another natural substance or another natural substance derivative, preferably another antibody or antibody derivative, and a third recognition species is a further different synthetic substance, a natural substance or a natural substance derivative, preferably a further different antibody or antibody derivative.

61. Test system for the detection of the presence or absence of at least two different markers in a sample comprising at least two recognition species which recognize at least two different markers with formation of a complex, at least two of the recognition species being differently labelled.

62. Test system according to Claim 61, characterized in that at least one recognition species is immobilized on a support.

63. Test system according to Claim 61 or 62, characterized in that at least one recognition species is a natural or unnatural, single-stranded or double-stranded nucleic acid and at least one other recognition species is another natural or unnatural, single-stranded or double-stranded nucleic acid.

64. Test system according to Claim 61 or 62, characterized in that at least one recognition species is a synthetic substance, a different natural substance or a different natural substance derivative other than a nucleic acid, preferably an antibody or antibody derivative, and at least one other recognition species is a synthetic substance, different natural substance or different natural substance derivative other than a nucleic acid, preferably an antibody or antibody derivative.

65. Test system according to Claim 61 or 62, characterized in that at least one recognition species is a hybrid of a natural or unnatural, single-stranded or double-stranded nucleic acid and a synthetic substance, a different natural substance or a different natural substance derivative other than a nucleic acid, preferably an antibody or antibody derivative.

66. Test system according to Claim 61 or 62, characterized in that at least one recognition species is a hybrid of a natural or unnatural, single-stranded or double-stranded nucleic acid and another natural or unnatural, single-stranded or double-stranded nucleic acid.

67. Test system according to Claim 61 or 62, characterized in that at least one recognition species is a hybrid of a synthetic substance, different natural substance or different natural substance derivative other than a nucleic acid, preferably an antibody or antibody derivative, and another synthetic substance, different natural substance or different natural substance derivative other than a nucleic acid, preferably an antibody or antibody derivative.

68. Process for the production of a test system according to one of Claims 61-67, characterized in that the individual recognition species are assembled.

69. Process according to Claim 68, characterized in that at least one recognition species is immobilized on a support.

70. Use of the test system according to one of Claims 61-67 for the detection of the presence and/or absence of at least two different markers in a sample.

71. Use of the test system according to Claim 68 in the form of a diagnostic or in the form of an analyte.

72. Use of the test system according to Claim 68 or 69 for the detection of a disorder or for environmental analysis, in particular for the detection of disease pathogens, markers of diseases, toxins and/or allergens.--

REMARKS

The claims have been amended to include amendments that were made during International Preliminary Examination. No new matter has been added.

Entry of this amendment and an early examination on the merits are respectfully solicited.

Respectfully submitted,
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